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ABSTRACT

In the 1950s, the U.S. government offered several projects to help Taiwan, one of which was the Industrial Vocational Education Cooperative Project. An advisory team was sent to Taiwan to help review the industrial education system, restructure the curriculum, and renew the teaching-learning facilities in the industrial vocational high schools. With grants from the U.S. government, a cooperative project was launched, and active measures were taken. The Department of Industrial Education was established at Provincial Taiwan Normal University to train professional teachers for the industrial vocational high schools. The Taiwanese government selected eight industrial vocational senior high schools to carry out a pilot teaching program that followed the U.S. Unit Trade Training Curriculum. In 1958, a survey was made of the industrial job market in Taiwan. Six keys to the success of the cooperative project were identified: (1) strong support from both governments; (2) the provision of developmental funds by both governments; (3) effective teacher training programs; (4) the exchange of ideas; (5) pilot schools; and (6) effective management. Due to the success of this project, a solid foundation for the development of industrial vocational education in Taiwan was established. After 30 years of growth, a dual system has emerged: a general education system and the technical vocational education system. (YLB)

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THE IMPACT OF THE 1950S' SINO-AMERICAN INDUSTRIAL VOCATIONAL EDUCATION COOPERATIVE PROJECT ON THE CURRENT TECHNICAL VOCATIONAL EDUCATION IN THE REPUBLIC OF CHINA

五十年代中美技職教育合作計畫對現代中華民國技職教育之影響

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The Impact of the 1950s' Sino-American Industrial Vocational Education Cooperative Project on the Current Technical Vocational Education in the Republic of China

ABSTRACT

There are many elements contributing to the rapid economic development in Taiwan, and the excellence and abundance of the technical manpower is the major one. In discussion of the technical manpower, people in Taiwan can never forget the assistance the U.S. government gave to them.

In the 1950s, the U.S. government offered several projects to help the R.O.C., among which was the Industrial Vocational Education Cooperative Project. In consequence, an advisory team, including Dr. Land, then the chairperson of the Department of Industrial Education at Pennsylvania State University, was sent to Taiwan to help review the Industrial Education System, restructure the curriculum and renew the teaching-learning facilities in the industrial vocational high schools in the R.O.C.. With grants from the U.S. government, a well-organized cooperative project was launched and active measures were taken. The R.O.C. government selected eight industrial vocational senior high schools to carry out a pilot teaching program which followed the U.S. Unit Trade Training Curriculum. The U.S. government contributed a lot to updating school buildings as well as other teaching and learning facilities such as the workshops. The Cooperative Project was such a great success that it laid a solid foundation for the

subsequent development of technical vocational education in the Republic of China. We owe much of what we are today to U.S. aid in the 1950s.

This writer is deeply convinced of the value of a thorough study of the Project. Therefore, the purpose of this article is to study the processes and the content of this Cooperative Project, and its impact on the current technical vocational education in the Republic of China.

I. Introduction

The rapid economic growth of the Republic of China is acclaimed as an outstanding example among the developing countries and renowned as the "Taiwan Experience" or the "economic miracle." In 1951, the average per capita income in Taiwan was only about 100 U.S. dollars, and it was about 450 U.S. dollars in 1965. However, in 1990 it has gone up to about 8,000 U.S. dollars. There are several causes for such a miracle, but the most important one is the abundant manpower with well-trained skills and techniques. With diligence, a distinct characteristic of the Chinese people, and sufficient access to the industrial vocational education and training, the quantity and quality of the technical manpower has been greatly elevated year after year. As a result, in 1990, 70 percent of the senior high school students in Taiwan joined the technical vocational education system, while only 30 percent stayed with the general education system. Opportunities for vocational high school graduates to enter technical colleges have been

increasing as well as the number of students continuing with higher education. So far, even Ph.D. programs have been offered in the industrial vocational education system.

Looking back over the development of the industrial vocational education in the last forty years, we can clearly see that the Sino-American Industrial Vocational Education Cooperative Project in the 1950s has played an important role. It is worth analyzing and probing into the background and the content of the Cooperative Project, and its influence on the development of the current technical vocational education in Taiwan. The success of the Cooperative Project could be utilized as an excellent example for future international cooperation in industrial vocational education and training.

II. Background of the Sino-American Industrial Vocational Education Cooperative Project in the 1950s.

Although the history of industrial vocational education in the Republic of China has been short, we can identify at least the following two important reasons for the urgent need of implementing the project.

A. The need to solidify national defence with economic development

After the Sino-American Mutual Defence Treaty had been signed in 1955, the political and social situations in Taiwan were more stabilized. The R.O.C. government started

to devote itself to making the country prosperous. After the U.S. army helped to defend Taiwan, the U.S. government provided not only military aid but partial economic assistance to Taiwan. At that time, the R.O.C. and the U.S. government saw eye to eye with each other. Both governments believed that the only way to strengthen defense and power in Taiwan was to raise the quality of the technical manpower and to build up human resources. These were listed among the important policies of the R.O.C. government. Consequently, the U.S. government sent a group of experts and scholars to administer a survey of the industrial vocational education in Taiwan. A cooperative project was then suggested and the American Unit Trade Training Curriculum was introduced in Taiwan.

B. The traditional industrial vocational education failed to meet the social demands

The Principal of Taipei Municipal Vocational Senior High School at the time, Mr. Lin Chin-huei pointed out the defects of vocational senior high schools by saying: "The aim of vocational senior high schools is to train skilled workers but the curriculum lays too much stress on theories. There are too many technical subjects whose contents are far beyond the students' comprehension and seriously lack practicability. Besides, the teaching facilities are far too poor. As a result, industrial and vocational high school graduates fail to meet the requirements of the industry."(1) Educators at that time all shared the same points of view as Mr. Lin. Many principals of the vocational high schools published articles expressing

the identical view that students learned too many subjects, but did not master even one subject. They were "Jacks of all trades, masters of none." Students learned a lot of theories, but the education they received could not make them qualified engineers; at the same time, the students' skills were not better than any traditional apprenticed workers because the students had neglected skill training. Therefore, upon graduation, they tended to find what they had learned was irrelevant to what they had to do for their jobs.

III. Major Content of the Cooperative Project

The Cooperative Project had a comprehensive coverage of ways to improve the industrial vocational education, some of which has had great influence on the R.O.C.. They are as follows:

A. Offering teacher training programs

In the fall of 1951, a survey conducted in Taiwan indicated a need for teacher training to prepare teachers in the fields of industrial arts and vocational industrial education. In February of 1953, a contract was signed between Provincial Taiwan Normal University and Pennsylvania State University, with the latter contracting to provide assistance with the establishment and development of the Department of Industrial Education at Provincial Taiwan Normal University. The contract between the two universities was in effect

for slightly more than five years. The establishment of the Department of Industrial Education at Provincial Taiwan Normal University was very encouraging because it was the first time there was a well-planned program to train professional teachers to teach in the industrial vocational high schools. During this period of time, the Department of Industrial Education offered two-year and five-year curricula for industrial arts teachers, a four-year curriculum for subject-related teachers and a one-year curriculum for shop teachers.(2)

B. Selecting pilot industrial vocational schools to carry out the American Unit Trade Training Curriculum

In 1955, based on the Cooperative Project, seven provincial vocational senior high schools (including Hsinchu Vocational Senior High, Chiayi Vocational Senior High, Tainan Vocational Senior High, Kaohsiung Vocational Senior High, and Hualien Vocational Senior High) along with Taipei Municipal Vocational Senior High School were chosen to carry out the Unit Trade Training Education Curriculum. The Curriculum stressed learning practical knowledge of the related areas, strengthening skill-training as well as the ability to operate machines, and increasing the number of practicuum hours (15 hours per week on average.) The U.S. government helped to provide the eight schools with new equipment and facilities for practical training, and thus helped to lay a solid foundation for the development of industrial vocational education in the R.O.C. After

sceing the effective instructional outcomes of the eight pilot industrial vocational senior high schools, the government began to implement an over-all industrial vocational education innovation. Such a steady approach to planning is indeed the key to a successful program.

C. Making a survey of the demand of manpower in the industry and enterprises

In 1958, upon the suggestion of the U.S. advisory team, the Taiwan Industrial Vocational Education and Training Committee was set up to conduct a general survey of the industrial job market in Taiwan. Twenty-three related institutions worked together to form a guidance committee to investigate in detail the nature of industry based on the aspects of skills and education required for the industrial manpower. The results of the survey reflected the various directions to implement the new Unit Trade Training Program in different areas across the country. Consequently, the curriculum, the course design, the syllabi and the facilities were based on the results of the survey as a means to meet the requirements of society, the enterprises, and the students as well as the teachers.

IV. Difficulties Encountered at the Initial Stage of the Cooperative Project

Owing to the old curriculum that had been implemented for years and the traditional conservativeness of the Chinese

culture, the new Unit Trade Training Program met with some criticism and gave rise to controversies at the initial stage.(3) It seemed that the program was not easily accepted. Such a phenomenon is identical to the almost inevitable rejection after an organ transplant. Later on, through the exchange of idea and the justification of the new program, controversies and criticism died away.

V. Keys to the Success of the Cooperative Project

A. The strong supports from both governments

The U.S. government sent an advisory team composed of professors from the Department of Industrial Education at Pennsylvania State University. These professors were the backbone of the advisory team. Experts and scholars from the State Department of Education were also sent to stay in Taiwan on a long-term basis. The advisory team provided the R.O.C. with consultation and various policies for the development of industrial vocational education. They also assisted with the development of plans for administrative and teaching services. In the meantime, the R.O.C. government demanded full cooperation from the Ministry of Education, the Provincial Department of Education, and the Minicipal Bureau of Education.

B. The founding of the developmental funds

Following the experts' suggestions, the U.S. government

agreed to provide financial support and developmental funds for new equipment and tools for experiments as well as for the students' practical training. The purchases were made on an annual basis with the R.O.C. government allocating part of its budget for funding. Meanwhile, modern workshops and laboratories were set up with the funds, and improved factory management systems were established. This was really an unprecedented undertaking in Taiwan when considering the financial straits of the 1950s.

C. Effective teacher training programs

The Chinese people have a saying, "For the recovery of the country, we must have capable people. For education, we must have qualified teachers." When this saying is applied to the success of the Unit Trade Training Program, it has true meaning. During that period of time, the Department of Industrial Education at Taiwan Normal University cooperated with Pennsylvania State University and the Pennsylvania State Department of Education in training many qualified workshop teachers. They received lots of hands-on experience and acquired good skills. Teachers in the subject-related areas, and teachers of industrial arts were also involved as a group, who formed a new task force in the industrial education arena. The government of the Republic of China also sent approximately one hundred teachers (including teachers, administrators in the teacher-training institutions and teachers of vocational senior high schools) to Pennsylvania State University to participate in a six-month to two-year

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on-the-job training programs. This program contributed greatly to the elevation of teachers' professional knowledge and thus enhanced the quality of their teaching. These teachers became the mainstream in the development of industrial education in Taiwan in the 1960s and 1970s.

D. The selection of pilot schools

At that time, eight representative schools were chosen as pilot schools. These schools set good examples for other schools in curriculum and workshop planning, an implementation of the U.S. Unit Trade Training program. The success of these eight pilot schools helped to convince other industrial vocational schools of the necessity to reform old curriculum which had been used for a long period of time with little instructional effectiveness.

E. The exchange of ideas

In order to put the new curriculum into practice, the exchange of ideas was of vital importance. In addition to giving various workshops and seminars, the Industrial Vocational Education Monthly magazine was issued. It provided a channel for exchanging ideas, to open up an access to voicing what one had learned from one's work or one's studies and creative ideas they had. The Monthly was a great success and the articles published were regarded as conducive to the improvement of the Industrial Vocational Education, and the exchange of ideas and teaching experiences among educators in this field

was certainly very helpful in the upgrading of the industrial vocational education system.

F. Effective management

American advisors established an effective management system for the new curriculum and use and maintenance of equipment. Once a defect in the management system was detected, it was modified immediately. Such a scientific approach is certainly important for the success of the Cooperative Project.

VI. The Impact of the Cooperative Project on the Industrial Vocational Education in the Republic of China

Due to the success of Sino-American Industrial Vocational Education Cooperative Project in the 1950s, a solid foundation for the development of Industrial Vocational Education in the Republic of China was established. After 30 years' steady growth, the R.O.C. has established a dual system: that is, a general education system and the technical vocational education system. A student who attends a vocational senior high school has the opportunity to pursue graduate studies leading to a Master's degree or a Ph.D. degree. At present, the number of vocational high school students has surpassed that of the general high schools. According to the latest data in 1991, the total number of vocational senior high schools is 216; while the total number of general senior high schools is

170. The total number of students enrolled in vocational senior high schools is 499,111; while the total number of general senior high school students is 209,010. Technical institutes and junior colleges exceed universities and colleges both in the number of schools and in the number of students. The total number of technical institutes and junior colleges in 1991 is 76; while the total number of universities and colleges is 45. The number of students of the former is 320,068; while the number of students of the latter is 234,183. At the present stage, vocational senior high schools are divided into seven areas of study : agriculture, industry, commerce, home economics, marine sciences, medicine, nursing, and drama. Junior colleges are divided into 13 areas of study: agriculture, engineering, business, art, agricultural engineering, industrial and business management, home economics, marine sciences, medicine, nursing, physical education, journalism, and foreign languages. Technical institutes are divided into 4 areas: engineering, commerce, design, and nursing. Graduate programs leading to a Master's degree and a Ph.D. degree were set up in technical institutes five years ago. The entire technical vocational education system is growing rapidly and will have a bright and promising future. When we go over the history of the successful development of technical vocational education in Taiwan, we can clearly see that the Sino-American Industrial Vocational Education Cooperative Project is the prime factor for its success.

VII. Conclusion

The introduction and implementation of a new curriculum should be conducted in accordance with the needs of the country, the enterprises, the students and the teachers. It should take into consideration the match of the development of science and technology, the megatrend of the time, the government policies, social backgrounds and the immediate society. If assistance and experiences can be obtained from other countries through international cooperation, people surely can get twice the rewards with only half the effort.

However, the first requirement for the success of an international cooperative education project is the unanimity and the support of the two governments. An advisory team should then be established to map out strategies and directions for the future development, based on the data gathered from surveys. In order to train technical manpower with appropriate skills, teacher-training should be the first priority, followed by the assignment of pilot schools, required funding, the provision of essential facilities, and the publicizing and exchange of new ideas. All of the elements are indispensable to a successful project. The success of the Sino-American Industrial Vocational Education Cooperative Project in the 1950s is due to the full accomplishment of the above-mentioned requirements. Undoubtedly, the Education Cooperative Project has had a profound influence on the development of industrial vocational education in the Republic of China. A firm and loyal friendship between the

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Chinese and American scholars in the technical education area has thus been established.

There is an old Chinese proverb which says, "When you drink water, think of its source." It means we must feel grateful for any favors received. This writer and many other educators and scholars engaged in the industrial vocational education in Taiwan often talk a lot about the Education Cooperative Project. From deep down in our hearts, we think of those dear friends and scholars who contributed to the Sino-American Industrial Vocational Education Cooperative Project in the 1950s and we have always been very grateful to them.

Notes

1. Lin, Chin-huei, " An Introduction To Taipei Municipal Vocational Senior High School," Vocational Industrial Education, June,1958, 2:3.
2. Knoebel, Robert M., "Industrial Teachers' Education in Free China Industrial Education," Vocational Industrial Education, July, 1958, 2:5.
3. Ku, Po-yen, "Criticism And Controversies:After Reading A Survey and Improvement of Industrial Vocational Education." Vocational Industrial Education, April,1958.